

Work Order ID 154815***154815***

Page 1

Thursday, December 22, 2016 7:16:52 AM

Item ID: D5122-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Center Support, Upper

Start Date: 1/5/2017 Start Qty: 4.00 ***4***

Cust Item ID:

Required Date: 1/12/2017 Req'd Qty: 4.00 ***4***

Customer:

Reference:

Approvals: Process Plan: DAS 21 Date: DEC 22 2016

Tooling: _____ Date: _____

Run Start ***NR1***QC: 9-89 Date: _____ SPC (Y/N): _____ Date: _____Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
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D5122	A
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100

0.02

100

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.52

HAAS CNC vertical machine #1

Machine as per Folio FB324

Folio Rev: AADwg Rev: A

Deburr

110

0.00

110

QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.01

Quality Control

DAS
33
9-8917/01/23DAS
33
9-8917/01/23

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation		Disposition			
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : _____			

154815

Thursday, December 22, 2016 7:16:52 AM

N900040100

Setup Start *NS1*

Stop *NS2*

Customer:

Start Date: 1/5/2017 **Start Qty:** 4.00 ***4***

Required Date: 1/12/2017 **Req'd Qty:** 4.00 ***1***

Reference:

Run Start *NR1*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

**Insp.
Stamp**

0.00

120

QC

Memo

0.01

Quality Control

Identify as per dwg & Stock Location: LG 3

0.00

130

Packaging

Memo

0.01

Packaging

LOCATION : ~~LC054~~

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.07

Quality Control

JAN 24 2017

mf
17-1-24

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval				
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval			
Root Cause		FAULT CATEGORY									
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :									
Misidentified ☐	Past Due ☐										

Picklist Print

Thursday, December 22, 2016 7:16:52 AM

Work Order ID: 154815

154815

Parent Item: D5122-1

D5122-1

Parent Item Name: Center Support, Upper

Start Date: 1/5/2017

Required Date: 1/12/2017

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP REV.A NEW ISSUE JFS 14/07/16 VERIFIED BY: DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D5122-1TRN		Manufactured	No			100	Each	4.0000	0.5	2		DAS 33 9-89	
D5122-1TRN									**			17/01/22	
Center Support, Upper, Turning Detail													

Location

Loc Qty

Loc Code

MAT060

4

151032

4

3

DQA: _____ Date: _____

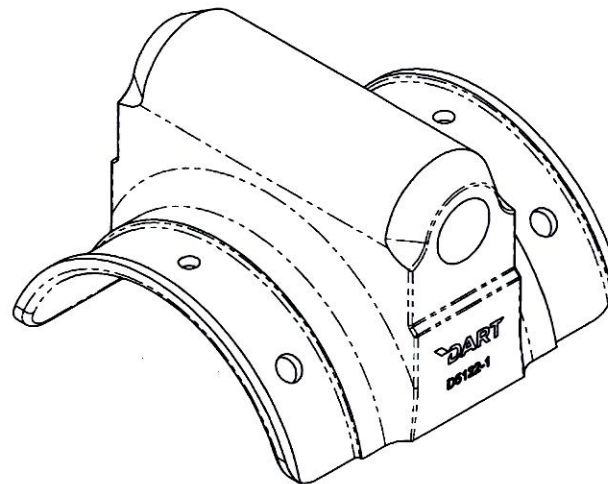


WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					



D5122-1 CENTER SUPPORT

NOTES:

- 1) MATERIAL: MAKE FROM D5122-1TRN
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART LOGO AND P/N "D5122-1" IN AREA SHOWN
USING 0.125 HIGH X 0.010-0.020 DEEP LETTERING PER DART QSI 044 6.3,
IDENTIFY WITH DART B/N PER DART QSI 044 6.1
- 7) WEIGHT: 2.13 lbs
- 8) ALL NON-DIMENSIONED FEATURES DEFINED PER DRAWING FILE "D5122-1-REVA.SLDPRT"

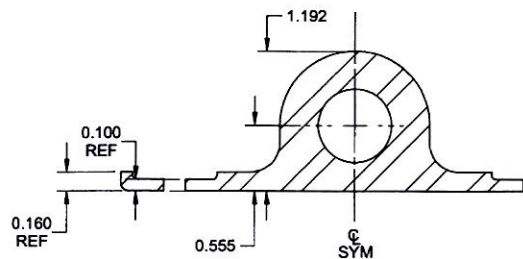
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 154815 MLJ

16-12-22

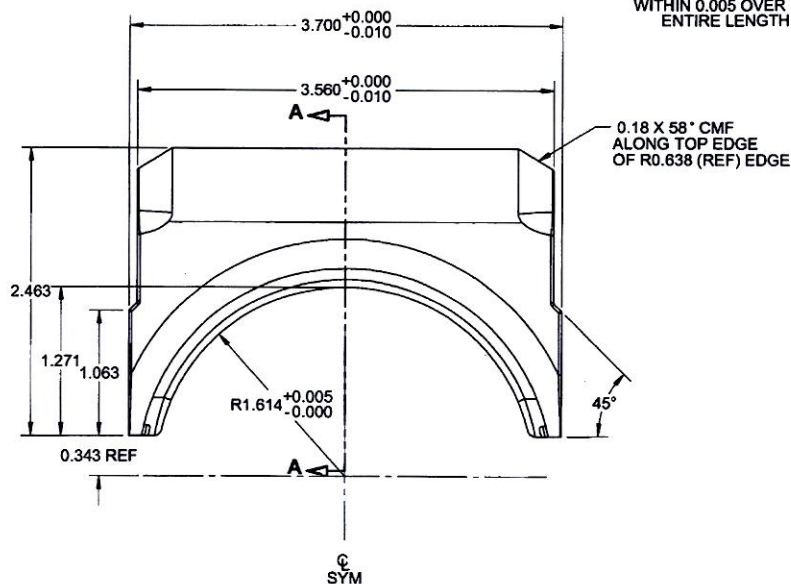
RELEASED
2014-08-25

A	NEW ISSUE		AP	14.06.02
REV.	DESCRIPTION		BY	DATE
DESIGN	AP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D5122 TITLE CENTER SUPPORT COPYRIGHT © 2014 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	REV. A	
DRAWN	AP		SHEET 1 OF 3	
CHECKED	CP		SCALE	
MFG. APPR.	JLM		NTS	
APPROVED	MP			
DE APPR.	DS			
DATE	14.06.02			

APPROVED



SECTION A-A



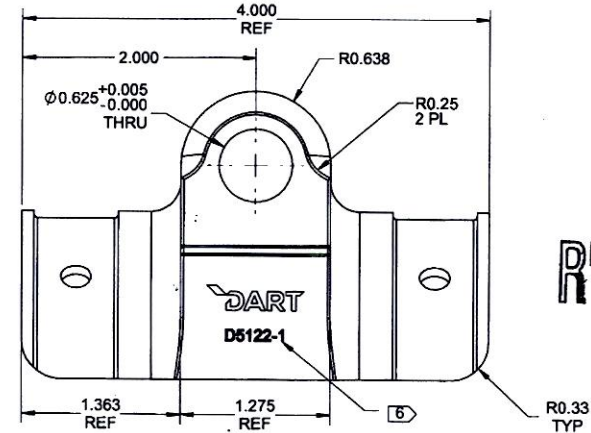
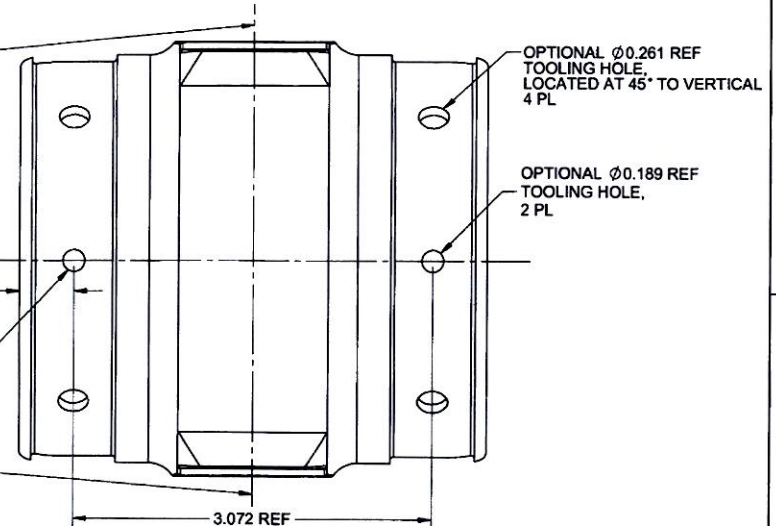
D5122-1 CENTER SUPPORT

HOLES PERPENDICULAR
WITHIN 0.005 OVER
ENTIRE LENGTH

R0.063
AROUND INSIDE EDGE

HOLES PERPENDICULAR
WITHIN 0.005 OVER
ENTIRE LENGTH

0.18 X 58° CMF
ALONG TOP EDGE
OF R0.638 (REF) EDGE



OPTIONAL Ø0.261 REF
TOOLING HOLE,
LOCATED AT 45° TO VERTICAL
4 PL

OPTIONAL Ø0.189 REF
TOOLING HOLE,
2 PL

RELEASED
2014-08-25

APPROVED

DESIGN	AP	DART AEROSPACE LTD	
DRAWN	AP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	CP	DRAWING NO.	REV. A
MFG. APPR.	JLM	D5122	SHEET 2 OF 3
APPROVED	MP	TITLE	SCALE
DE APPR.	DS	CENTER SUPPORT	NTS
DATE	14.06.02	COPYRIGHT © 2014 BY DART AEROSPACE LTD	
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DART AEROSPACE LTD		Work Order:	154815
Description: Center Support		Part Number:	D5122-1
Inspection Dwg: D5122 Rev: A		Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

Dim	Min	Max	Go/No Go Gauge	Record Actual Dimensions				
				1	2	3	4	5
HAAS Section								
AA	1.182	1.202		1.189	1.191	1.191	1.190	1.192
AB	0.090	0.110		0.094	0.094	0.094	0.094	0.094
AC	0.545	0.565		0.556	0.556	0.557	0.555	0.555
AD	3.690	3.700		3.696	3.696	3.696	3.696	3.694
AE	3.550	3.560		3.556	3.566	3.556	3.556	3.555
AF	2.453	2.473		2.464	2.464	2.464	2.464	2.464
AG	1.261	1.281		1.273	1.262	1.272	1.268	1.270
AH	0.150	0.210		0.180	0.180	0.180	0.180	0.180
AI	0.454	0.474		0.464	0.464	0.464	0.464	0.464
AJ	Ø0.260	Ø0.267		0.261	0.261	0.261	0.261	0.261
AK	Ø0.188	Ø0.194		0.190	0.190	0.190	0.190	0.190
AL	3.067	3.077		3.072	3.072	3.072	3.072	3.072
AM	3.990	4.010		4.000	4.000	4.000	4.000	4.000
AN	1.990	2.010		1.990	1.995	2.001	2.001	2.003
AO	Ø0.625	Ø0.630		0.626	0.626	0.626	0.626	0.626
AP								
AQ								
AR								
AS								
AT								
AU								
AV								
AW								
AX								
AY								
AZ				0.000	0.0015	0.005	0.001	0.0005
Ensure that Ø " bore is perpendicular to " bore within "								
Accept/Reject				/	/	/	/	

Measured by:	DAS 33	Date:	17/01/23
Audited by:	B. e 9-89 DAS 08	Date:	17-01-24
Preliminary Approval:	9-89	Date:	

Rev	Date	Change	Revised By	Approved
A	15.03.12	New Issue	KJ	

DART AEROSPACE LTD		Work Order:	154815
Description: Center Support		Part Number:	D5122-1
Inspection Dwg: D5122	Rev: A	Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	# 6				
HAAS Section								
AA	1.182	1.202		1.190				
AB	0.090	0.110		0.094				
AC	0.545	0.565		0.552				
AD	3.690	3.700		3.694				
AE	3.550	3.560		3.555				
AF	2.453	2.473		2.464				
AG	1.261	1.281		1.274				
AH	0.150	0.210		0.180				
AI	0.454	0.474		0.464				
AJ	Ø0.260	Ø0.267		0.261				
AK	Ø0.188	Ø0.194		0.190				
AL	3.067	3.077		3.072				
AM	3.990	4.010		4.000				
AN	1.990	2.010		2.003				
AO	Ø0.625	Ø0.630		0.626				
AP								
AQ								
AR								
AS								
AT								
AU								
AV								
AW								
AX								
AY								
AZ				0.001				
Ensure that Ø " bore is perpendicular to " bore within "								
Accept/Reject				✓				

Measured by:	DAS 33 9-89	Date:	17/01/23
Audited by:	B. P. DAS 08 9-89	Date:	17-01-24
Preliminary Approval:		Date:	

Rev	Date	Change	Revised By	Approved
A	15.03.12	New Issue	KJ	